

**REMARKS**

Claims 1, 2, 7 and 8 are amended. Support for the newly-added limitations can be found in at least ~~¶¶~~ 0050-0054 and FIGs. 1-2 of the present application. Claim 12 is added. Claims 1-12 are pending in this application. Applicants reserve the right to pursue the original claims and other claims in this and other applications.

Claims 1-7 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 1 has been amended to address the concerns raised in the Office Action. Applicants respectfully request that the rejection of these claims be withdrawn and the claims allowed.

Claims 1-5 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,861,771 to Matsuda et al. (“Matsuda”) in view of U.S. Patent No. 6,157,176 to Pulvirenti. The rejection is respectfully traversed.

Claim 1 recites “a high-breakdown-voltage regulator configured to operate at a high input voltage to produce a regulated output voltage that is lower than the high input voltage, said regulator comprising... a first differential amplifier circuit configured to receive a first input generated from said high input voltage by a first reference voltage generating circuit and a second input as a feedback voltage divided by said resistors, said first differential amplifier being driven by said high input voltage... [and] a low-breakdown-voltage regulator comprising a second reference voltage generating circuit configured to receive the regulated output voltage from the high-breakdown-voltage regulator to generate a second reference voltage and a second differential amplifier circuit configured to receive the second reference voltage from the second reference voltage generating circuit to produce a drive voltage.”

The Matsuda and Pulvirenti combination does not teach or suggest “a first differential amplifier circuit configured to receive a first input generated from said high input voltage by a first reference voltage generating circuit and a second input as a feedback voltage divided by said

resistors, said first differential amplifier being driven by said high input voltage.” The Office Action admits that Matsuda does not teach or suggest a first differential amplifier circuit... being driven by said high input voltage.” (Office Action at 4). Pulvirenti is cited as teaching a high-voltage-breakdown regulator, but does not cure the deficiencies of Matsuda. The operational amplifier OP1 of Pulvirenti—which the Office Action characterizes as the differential amplifier of claim 1—is not “driven by said high input voltage.” On the contrary, Pulvirenti’s OP1 explicitly “requires a driver circuit... being supplied with a *higher* voltage, VCP, than the supply voltage, VBAT.” (Pulvirenti, col. 1, lns. 25-30, emphasis added).

The cited combination does not teach “a second reference voltage generating circuit configured to receive the regulated output voltage from the high-breakdown-voltage regulator to generate a second reference voltage and a second differential amplifier circuit configured to receive the second reference voltage from the second reference voltage generating circuit to produce a drive voltage,” either. The Office Action characterizes Matsuda’s op-amp 41 as the second reference voltage generating circuit of claim 1. (Office Action at 3). Applicants respectfully disagree with this characterization. As a threshold matter, neither of Matsuda’s  $V_{cc}$  or  $V_R$  are regulated, as recited in claim 1. Further, Matsuda’s op-amp 41 is not “configured to receive the regulated output voltage from the high-breakdown-voltage regulator to generate a reference voltage.” As can be seen in FIG. 4 of Matsuda, neither of voltages  $V_{cc}$  or  $V_R$ —voltages characterized by the Office Action as ‘outputs’ of the high-breakdown-voltage regulator that the Office Action admits Matsuda does not teach—is an input to Matsuda’s op-amp 41. (Matsuda, FIG. 4; Office Action at 3-4). Although Matsuda’s  $V_R$  acts as a *supply* to op-amp 41, op-amp 41’s *inputs* are generated from transistors 42 and 43 to cancel temperature variation in the output of the op-amp (Matsuda’s  $V_{ref}$ ). (Matsuda, col. 6, lns. 20-33).

For at least these reasons, claim 1 is believed to be allowable over the combination of Matsuda and Pulvirenti. Claims 2-5 and 7 depend from claim 1 and are allowable along with claim 1 for at least the reasons provided above as well as on their own merits. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuda in view of U.S. Patent No. 5,936,460 to Iravani, and further in view of Pulvirenti. The rejection is respectfully traversed.

As noted above, claim 1 as amended should be allowable over Matsuda and Pulvirenti. Iravani is cited for teaching an inverter circuit, and fails to cure the deficiency of Matsuda and Pulvirenti noted above with respect to claim 1. Accordingly, for at least these reasons, Applicants submit that claim 6 is allowable over the cited combination and respectfully request that the rejection be withdrawn.

Claims 8 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuda in view of Iravani, further in view of Japanese Patent No. 2002270781A to Negoro et al. (“Negoro”), and further in view of Pulvirenti. The rejection is respectfully traversed.

Claim 8 has been amended to recite limitations similar to those of amended claim 1, and claim 11 depends from claim 8. Negoro is cited as teaching a diode, and does not cure the above-noted deficiencies of Matsuda, Pulvirenti, or Iravani. Therefore, claims 8 and 11 are believed to be allowable over the combination of Matsuda, Pulvirenti, Iravani and Negoro for at least the same reasons as well as on their own merits. Accordingly, Applicants respectfully request the rejection be withdrawn and the claims allowed.

Claims 9-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuda, Iravani, Negoro and Pulvirenti and further in view of U.S. Patent Publication No. 2004/0046532 to Menegoli et al. (“Menegoli”). The rejection is respectfully traversed.

Claims 9-10 depend from claim 8 and are believed to be allowable over the combination of Matsuda, Pulvirenti, Iravani and Negoro for at least the reasons provided above as well as on their own merits. Menegoli is cited for teaching forming MOSFET transistors in either enhancement or depletion mode by adjusting the surface concentration of the channel region and fails to cure the deficiencies of Matsuda, Pulvirenti, Iravani and Negoro. Claims 9-10 should therefore be found allowable over the combination of Matsuda, Pulvirenti, Iravani, Negoro and

Menegoli. Accordingly, Applicants respectfully request the rejection be withdrawn and the claims allowed.

In view of the above, Applicants believe the pending application is in condition for allowance.

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